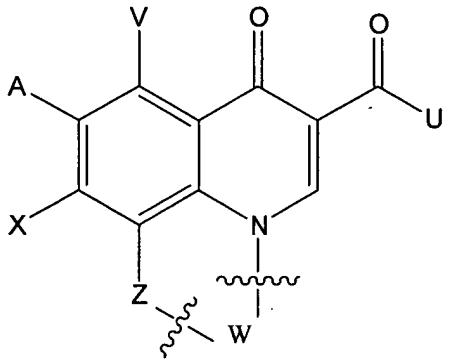
CLAIMS

1. A compound having formula 1, or pharmaceutically acceptable salts thereof



(1)

and pharmaceutically acceptable salts, esters and prodrugs thereof;

wherein V is H, halo, or NR^1R^2;

A is H, fluoro, or NR^1_2;

Z is O, S, NR^1 or CH_2;

U is OR^2 or NR^1R^2;

X is OR^2, NR^1R^2, halo, azido, or SR^2;

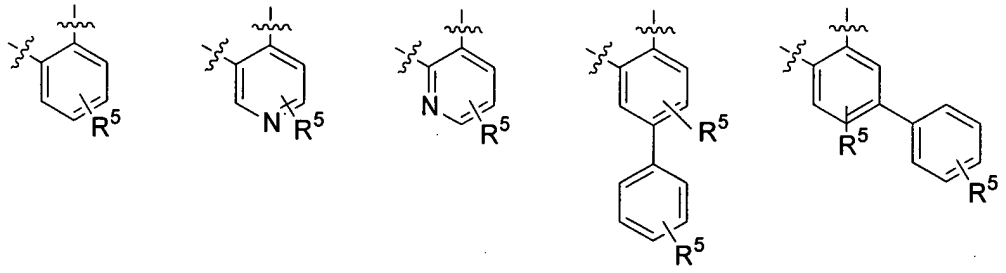
n is 1-3;

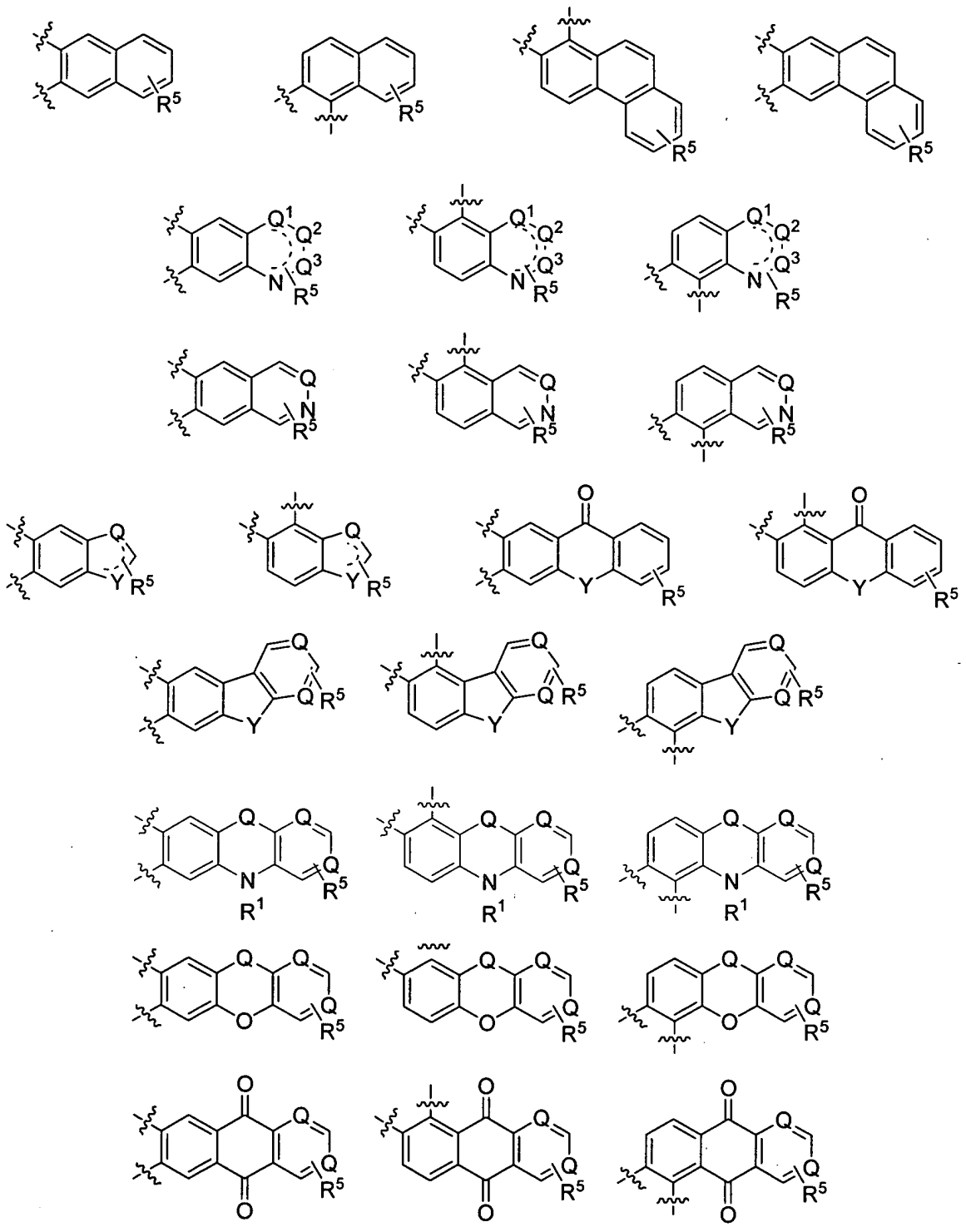
wherein R^1 and R^2 in NR^1R^2 may form a double bound or a ring, each of which is optionally substituted;

R^1 is H or a C_{1-6} alkyl;

R^2 is H or a C_{1-10} alkyl or C_{2-10} alkenyl optionally containing one or more non-adjacent heteroatoms selected from N, O, and S, and optionally substituted with a carbocyclic or heterocyclic ring; or R^2 is an optionally substituted heterocyclic ring, aryl or heteroaryl;

W is selected from the group consisting of





wherein Q, Q^1, Q^2, and Q^3 are independently CH or N;

Y is independently O, CH, =O or NR^1;

and R^5 is a substituent at any position on the fused ring; and is H, OR^2, C_{1-6} alkyl, C_{2-6} alkenyl, each optionally substituted by halo, =O or one or more heteroatoms; or R^5 is an inorganic substituent; or two adjacent R^5 is linked to obtain a 5-6 membered substituted or unsubstituted carbocyclic or heterocyclic ring, optionally fused to an additional substituted or unsubstituted carbocyclic or heterocyclic ring;

provided that U is not OR^1 when X is pyrrolidinyl; A is F; Z is O; and W is naphthalenyl or phenylene;

U is not morpholinyl or 2,4-difluoroaniline when X is F or pyrrolidinyl; A is F; Z is O; and W is phenylene; and

further provided that if U is OH, then W represents multiple fused aromatic rings and X is not halo; and X is NH_2, or a moiety that does not contain N, or contains more than 6 carbons.

2. The compound of claim 1, wherein A and X are independently halo.

3. The compound of claim 2, wherein said halo is fluoro.

4. The compound of claim 1, where V is H.

5. The compound of claim 1, wherein U and X are independently NR^1R^2.

6. The compound of claim 5, wherein R^1 is H and R^2 is a C_{1-10} alkyl optionally containing one or more heteroatoms, and optionally substituted with a C_{3-6} cycloalkyl, aryl or a 5-14 membered heterocyclic ring containing one or more N, O or S.

7. The compound of claim 6, wherein said 5-14 membered heterocyclic ring is selected from the group consisting of tetrahydrofuran, 1,3-dioxolane, 2,3-dihydrofuran, tetrahydropyran, benzofuran, isobenzofuran, 1,3-dihydro-isobenzofuran, isoxazole, 4,5-dihydroisoxazole, piperidine, pyrrolidine, pyrrolidin-2-one, pyrrole, pyridine, pyrimidine, octahydro-pyrrolo[3,4-*b*]pyridine, piperazine, pyrazine, morpholine, thiomorpholine, imidazole, imidazolidine-2,4-dione, benzimidazole, 1,3-dihydrobenzimidazol-2-one, indole, thiazole, benzothiazole, thiadiazole,

thiophene, tetrahydro-thiophene 1,1-dioxide, diazepine, triazole, guanidine, diazabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, and 2,3,4,4a,9,9a-hexahydro-1H-β-carboline.

8. The compound of claim 5, wherein R^1 is H and R^2 is an aryl or a 5-14 membered heterocyclic ring containing one or more N, O or S, each optionally substituted with an amino or another heterocyclic ring.

9. The compound of claim 8, wherein said 5-14 membered heterocyclic ring is selected from the group consisting of tetrahydrofuran, 1,3-dioxolane, 2,3-dihydrofuran, tetrahydropyran, benzofuran, isobenzofuran, 1,3-dihydro-isobenzofuran, isoxazole, 4,5-dihydroisoxazole, piperidine, pyrrolidine, pyrrolidin-2-one, pyrrole, pyridine, pyrimidine, octahydro-pyrrolo[3,4-b]pyridine, piperazine, pyrazine, morpholine, thiomorpholine, imidazole, imidazolidine-2,4-dione, benzimidazole, 1,3-dihydrobenzimidazol-2-one, indole, thiazole, benzothiazole, thiadiazole, thiophene, tetrahydro-thiophene 1,1-dioxide, diazepine, triazole, guanidine, diazabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, and 2,3,4,4a,9,9a-hexahydro-1H-β-carboline.

10. The compound of claim 5, wherein R^1 and R^2 in NR^1R^2 form an optionally substituted 5-14 membered ring containing one or more N, O or S.

11. The compound of claim 10, where NR^1R^2 is morpholine, thiomorpholine, piperazine, piperidine or diazepine.

12. The compound of claim 1, wherein U and X independently have the formula

$$NR^1 - (CR^1_2)n - NR^3R^4 \qquad (2)$$

wherein R^1 and R^3 are independently H or $C_{1\text{-}6}$ alkyl;

n is 1-6; and

R^4 is H or a C_{1-10} alkyl or C_{2-10} alkenyl optionally containing one or more non-adjacent heteroatoms selected from N, O and S, and optionally substituted with a carbocyclic or heterocyclic ring; and

wherein R^3 and R^4 in NR^3R^4 may form an optionally substituted ring.

13. The compound of claim 12, wherein n is 2-3.

14. The compound of claim 12, wherein NR^3R^4 is an acyclic amine, or guanidinyl or a tautomer thereof; or R^3 and R^4 optionally form a substituted ring containing one or more N, O or S.

15. The compound of claim 12, wherein NR^3R^4 is morpholine, thiomorpholine, imidazole, pyrrolidine, piperazine, pyridine or piperidine.

16. The compound of claim 1, wherein X is NR^1R^2; and U has the formula

$$NR^1 - (CR^1{}_2)_n - NR^3R^4 \qquad (2)$$

wherein R^1 and R^2 are as defined in claim 1;

R^3 is H or C_{1-6} alkyl;

n is 1-6; and

R^4 is H or a C_{1-10} alkyl or C_{2-10} alkenyl optionally containing one or more non-adjacent heteroatoms selected from N, O and S, and optionally substituted with a carbocyclic or heterocyclic ring; and

wherein R^1 and R^2 in NR^1R^2; and R^3 and R^4 in NR^3R^4 each independently may form a substituted ring.

17. The compound of claim 16, wherein R^1 and R^2 in NR^1R^2; and R^3 and R^4 in NR^3R^4 each independently form a substituted ring containing one or more N, O or S.

18. The compound of claim 17, wherein X is optionally substituted with amino, carbamate, a C_{1-10} alkyl containing one or more non-adjacent N, O or S, and optionally substituted

with a heterocyclic ring; aryl or a saturated or unsaturated heterocyclic ring, each of which is optionally substituted.

19. The compound of claim 17, wherein X is substituted with a heterocyclic ring selected from the group consisting of tetrahydrofuran, 1,3-dioxolane, 2,3-dihydrofuran, tetrahydropyran, benzofuran, isobenzofuran, 1,3-dihydro-isobenzofuran, isoxazole, 4,5-dihydroisoxazole, piperidine, pyrrolidine, pyrrolidin-2-one, pyrrole, pyridine, pyrimidine, octahydro-pyrrolo[3,4-*b*]pyridine, piperazine, pyrazine, morpholine, thiomorpholine, imidazole, imidazolidine-2,4-dione, benzimidazole, 1,3-dihydrobenzimidazol-2-one, indole, thiazole, benzothiazole, thiadiazole, thiophene, tetrahydro-thiophene 1,1-dioxide, diazepine, triazole, guanidine, diazabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, and 2,3,4,4a,9,9a-hexahydro-1H-β-carboline.

20. The compound of claim 17, wherein X and NR^3R^4 are independently morpholine, thiomorpholine, imidazole, pyrrolidine, piperazine, pyridine or piperidine.

21. The compound of claim 20, wherein X and NR^3R^4 are independently pyrrolidine.

22. The compound of claim 21, wherein X is substituted with pyrazine.

23. The compound of claim 22, wherein W is naphthalenyl.

24. The compound of claim 1, wherein W is benzene, pyridine, biphenyl, naphthalene, phenanthrene, quinoline, isoquinoline, quinazoline, cinnoline, phthalazine, quinoxaline, indole, benzimidazole, benzoxazole, benzthiazole, benzofuran, anthrone, xanthone, acridone, fluorenone, carbazolyl, pyrimido[4,3-*b*]furan, pyrido[4,3-*b*]indole, pyrido[2,3-*b*]indole, dibenzofuran, acridine or acridizine.

25. The compound of claim 1, wherein U is OR^2 and R^2 is a C_{1-6} alkyl optionally substituted with a carbocyclic or heterocyclic ring.

26. The compound of claim 1, wherein each optionally substituted moiety is substituted with one or more halo, OR^2, NR^1R^2, carbamate, C_{1-10} alkyl, C_{2-10} alkenyl, each optionally substituted by halo, =O, aryl or one or more heteroatoms; inorganic substituents, aryl, carbocyclic or a heterocyclic ring.

27. The compound of claim 1, wherein said compound is chiral.

28. A pharmaceutical composition comprising the compound of claim 1 and a pharmaceutically acceptable excipient.

29. A method for ameliorating a cell proliferative disorder, comprising administering to a subject in need thereof an effective amount of the compound of claim 1 or a pharmaceutical composition thereof, thereby ameliorating said cell-proliferative disorder.

30. The method of claim 29, wherein said cell proliferative disorder is cancer.

31. The method of claim 29, wherein cell proliferation is reduced, or cell death is induced.

32. The method of claim 29, wherein said subject is human or an animal.

33. A method for reducing cell proliferation or inducing cell death, comprising contacting a system with an effective amount of the compound of claim 1 or a pharmaceutical composition thereof, thereby reducing cell proliferation or inducing cell death in said system.

34. The method of claim 33, wherein said system is a cell or tissue.

35. A method for reducing microbial titers, comprising contacting a system with an effective amount of the compound of claim 1 or a pharmaceutical composition thereof, thereby reducing microbial titers.

36. The method of claim 35, where the system is a cell or tissue.

37. The method of claim 35, wherein the microbial titers are viral, bacterial or fungal titers.

38. A method for ameliorating a microbial infection, comprising administering to a subject in need thereof an effective amount of the compound of claim 1 or a pharmaceutical composition thereof, thereby ameliorating said microbial infection.

39. The method of claim 38, where the subject is a human or an animal.

40. The method of claim 38, wherein said microbial infection is viral, bacterial or fungal.

41. The compound of claim 1, wherein V is NH_2 or $NR^1 - (CR^1_2)_n - NR^3R^4$;
wherein R^1 and R^3 are independently H or C_{1-6} alkyl;
n is 1-6; and
R^4 is H, C_{1-6} alkyl optionally substituted with a carbocyclic or heterocyclic ring, or aryl; and wherein R^3 and R^4 in NR^3R^4 may form an optionally substituted ring.

42. The compound of claim 16, wherein V is H.

43. The compound of claim 16, wherein A is fluoro.

44. The compound of claim 16, wherein W is naphthalenyl.

45. The compound of claim 23, wherein V is H and A is fluoro.

46. The compound of claim 1, wherein said compound is selected from the compounds in Figure 1.